

laparoscopic radical nephrectomy (LRN) for renal cell cancer (RCC) in a single centre.

Methods: From December 1997 to July 2011, data was collected prospectively for 397 consecutive patients undergoing LRN for pathologically confirmed RCC. Follow-up data was completed retrospectively. Patients were listed chronologically and split into 3 equal groups.

Results: There was no difference in age and gender between the 3 groups. The number of LRNs conducted for locally advanced (T3/4) disease (37, 27, 56) significantly increased ($P < 0.001$) but remained similar for localised (T1/2) disease (95, 106, 76). Surgical outcomes (operation time, blood loss etc) improved for localised disease ($P < 0.05$) and remain unchanged for locally advanced disease. There was a significant difference in overall survival (80.7%, 52.7%, 50.7%), cancer-specific survival (96.8%, 77.4% and 52.7%) and progression free survival (83.5%, 56.4%, 39.8%) between patients with T1, T2 and T3 disease ($p < 0.001$).

Conclusion: Operative outcomes following LRN for localised RCC have improved over time. LRN is increasingly undertaken for locally advanced disease which is acceptable from operative, post-operative and oncological standpoints. This is likely due to increased experience and operative ability to tackle more complex cases.

ASIT MEDICAL STUDENT PRIZE: 0286: HARMONIC SCALPEL VS. ELECTROCAUTERY DISSECTION IN MODIFIED RADICAL MASTECTOMY: RANDOMIZED CONTROLLED TRIAL

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Aim: To compare outcomes between harmonic and Electrocautery dissection in adult female patients underwent modified radical mastectomy (MRM).

Method: All adult females who underwent MRM during May 2010 to July 2011 were randomized to either intervention A harmonic scalpel or B electrocautery. The outcomes were estimated blood loss, operating time, drain volume, seroma, surgical site infection and postoperative pain. Comparison of groups were done with T-test for continuous and chi-square for categorical variables. Multiple linear regression was done to control the effect of age, BMI, breast volume, tumor size and neoadjuvant chemo radiotherapy.

Results: In each group, 75 patients were recruited. Both the groups were comparable for baseline variables with age of 48.5 ± 14.5 and 50.5 ± 12.2 years, respectively. Harmonic dissection yielded better outcomes as compared to electrocautery with lower EBL (182 ± 92 vs. 100 ± 62 , p -value: 0.00), operative time (187 ± 36 vs. 191 ± 44 , p -value: 0.49), drain volume (1035 ± 413 vs. 631 ± 275 , p -value: 0.00), drain days (17 ± 4 vs. 12 ± 3 p -value: 0.00), seroma formation (21.3% vs. 33.3%, p -value: 0.071), surgical site infection (5.3% vs. 23%, p -value: 0.006) and postoperative pain (3.4 ± 1 vs. 1.8 ± 0.6 , p -value: 0.00).

Conclusions: Although the harmonic didn't reduce the operative time, however, it significantly reduced post-operative discomfort and morbidity to the patient.

ASIT MEDICAL STUDENT PRIZE: 0361: PENOSCROTAL MEDIAN RAPHE DEVIATION MAY BE A NEW CLINICAL SIGN IN HYPOSPADIAS

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Hypospadias congenital anomaly is defined by a dystopic urethral meatus with/without chordee and prepuce hooding. We have additionally observed abnormal deviation of the penoscrotal median raphe (PMR) amongst hypospadiacs.

Aim: To investigate the potential significance of the previously unreported association between hypospadias and PMR deviation.

Methods: Prospectively, 30 healthy male infant controls were examined for PMR deviation. Preoperative photographs of 46 hypospadiacs were assessed retrospectively for the same. These groups were statistically compared.

Results: PMR deviation was, significantly ($p < 0.001$), twice as common in hypospadiacs (38/46; 83%) than controls (13/30; 43%). Incidence of PMR deviation was not affected by Duckett/Hadidi severity of hypospadiacs.

Conclusion: PMR deviation appears to be a significant clinical sign in hypospadiacs. Importantly, it is easily discernable even in the mildest forms

of hypospadias (that are often diagnosed late) without requiring prepuce retraction. Thus, it could increase sensitivity of hypospadias detection by paediatricians during neonatal checks. Whether PMR deviation should be acknowledged as part of hypospadias spectrum requires further large-scale research (currently underway), but would have important implications for hypospadias epidemiologic, etiologic and pathogenesis studies as well as for further aesthetic refinement of hypospadias reconstruction by correcting abnormal PMR deviation.

ASIT MEDICAL STUDENT PRIZE: 0477: THE DEVELOPMENT OF A VIRTUAL REALITY COLONOSCOPY TRAINING CURRICULUM

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Colonoscopy success in colorectal cancer prevention is dependent on operator competence in polyp-detection. Virtual-reality (VR) colonoscopy is a reliable method of teaching the psychomotor skill required for colonic intubation. Pathology-detection simulated-training has not been extensively studied; thus we have developed 20 novel VR polyp-detection tasks. We will assess their construct-validity, novice learning-curves and define benchmark criteria.

15 novices, 10 intermediate/experienced colonoscopists were recruited. All participants performed 4 repetitions of two types of VR-simulated models: clean and dirty colon. Additionally, 10 novices performed 12 more repetitions for learning-curve analysis. Tasks required participants to extubate the colon, detect abnormalities and cauterise them.

Both clean and dirty colon models distinguished between initial skill-levels of the novice and experienced colonoscopists in pathology-detection metrics: number of abnormalities located (clean- $p = 0.000$, dirty- $p = 0.0001$), number of polyps located ($p = 0.001, 0.004$) and number of angiodysplasias ($p = 0.0001, 0.0037$). Median scores of the experienced cohort in validated metrics determined the benchmark criteria. Both models showed statistically-significant learning-curves for pathology-detection metrics ($p < 0.05$). By the end of the programme, novices had progressed towards experienced benchmarks. Learning-curve plateaus occurred at third/fourth attempts for all pathology-detection metrics.

This study represents the first colonoscopy simulator study focused on VR pathology-detection teaching. The training tasks showed excellent construct-validity. Learning-curve analysis demonstrated significant increase in skill after repeated training; proving that targeted VR simulator-training can improve novice proficiency in mucosal inspection.

SARS ACADEMIC AND RESEARCH PRIZE: 0126: MAGNESIUM SULFATE ATTENUATES LOCAL ANAESTHETIC INDUCED CHONDROTOXICITY

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Purpose: Local anaesthetic has been reported to have a potentially detrimental effect on human chondrocytes. Magnesium may be an alternative analgesic agent following arthroscopy. We aimed to report on the effect on chondrocyte viability of adding magnesium to commonly used local anaesthetic agents.

Methods: Human chondrocytes were grown under standard culture conditions. Cells were exposed to either bupivacaine (0.125, 0.25, 0.5%) or ropivacaine (0.1875, 0.375, 0.75%) for 15 minutes with or without the addition of magnesium (10, 20, or 50%). Untreated cells served as controls. The MTS assay was used to assess for cell viability 24 hours after exposure. One-way ANOVA were used to test for statistical significance.

Results: Magnesium alone was no more toxic than normal saline ($P > 0.3$) compared to untreated cells. The addition of magnesium to the local anaesthetic agents resulted in greater cell viability than when cells were treated with local anaesthetic alone (bupivacaine ($P < 0.001$), ropivacaine ($P < 0.001$)).

Conclusion: We have showed that cell viability is improved with the addition of magnesium to local anaesthetic compared to local anaesthetic alone. These findings offer support to an alternative analgesia following arthroscopy although the optimum doses and combinations of local anaesthetic and magnesium are yet to be shown.